Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Draft Minutes of meeting of Coexistence Task Group at Session #15, Denver**
Date Submitted	**2001-09-13**
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Re:	Coexistence task group activities in session # 15
Abstract	N/A
Purpose	To provide a record of the meeting
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Draft Minutes of meeting of Coexistence Task Group

10-14 September 2001, Denver Colorado.

- Chaired by Phil Whitehead, Radiant Networks Plc
- Minutes prepared by Phil Whitehead Plc

Monday 10th September 2001

1. No meeting of the task group (plenary only)

Tuesday 11th September 2001

2. Meeting called to order at 09.00.
3. The draft agenda was unanimously approved with no alterations.
4. The status of the Recommended Practice was briefly discussed – final IEEE editing was undertaken and completed last week and the document will be published imminently.
5. The draft minutes of session #13 were unanimously approved without amendment.
6. The status of the task group was discussed. The PAR was approved by IEEE and this meeting is therefore the first formal session of the new task group (which replaces the study group). The appointed chair is Phil Whitehead. Other officials are yet to be appointed (to be discussed later during the meeting).
7. A discussion was held on the possibility of interim meetings. Due to budget and travel constraints, participants urged to avoid interim meetings if possible. In case the need arises for additional meetings, it was concluded that we should try to conduct business by telephone conference and call additional meetings only as a last resort.
8. Four input documents were noted, as follows:
    a. A document outline (Phil Whitehead)
    b. A contribution relating to simulation results for co-channel interference between point to point links and PMP systems (Phil Whitehead)
    c. A contribution providing simulation results for mesh to PMP interference, as a function of building height distribution (Phil Whitehead)
    d. A contribution on channel models for systems operating below 11 GHz, for use in coexistence calculations (Avi Freedman).
9. Paper (a) was presented by Phil Whitehead. It shows the results of a large number of simulation runs for the case where a collection of point point links interferes with a nearby (co-channel) PMP system. The parameters for the systems were taken as far as possible from the document produced and agreed during the last study group meeting It concludes that, for typical urban building and terrain parameters a spacing of 15-20km is needed between the PMP base station and the nearest part of the area covered by point to point links. The conclusions were accepted and it was unanimously agreed to included the work in the new Recommended Practice. The following actions were unanimously agreed:
    a. PW will paste suitable text into the outline, to create a first "working document" (not yet a formal draft)
    b. Remi Chayer asked for consideration of systems in which ATPC has only 2 values – minimum and maximum power (further simulation runs required)
    c. Remi Chayer asked for consideration of systems which use a small number of hub/star locations rather than random links – further simulation runs may be required
    d. PW will complete a further simulation exercise for the same area – adjacent channel case. This requires modifications to a different simulation tool.
    e. Remi agreed to try and complete a quick analysis of the same scenarios but with interferer and victim reversed, preferably during the meeting. The calculation is relatively simple, being a "worst case" between a single interferer and single victim station.
10. PW presented the second paper on coexistence between mesh systems and PMP systems. This shows how interference varies with different building height distributions. It concludes that all built up areas, even with low buildings, cuase considerable shielding of interference. The conclusions were accepted and it was

unanimously agreed to included the work in the new Recommended Practice. The following actions were unanimously agreed:
   a. PW will add text the document outline, as above
   b. David Chauncey agreed to study a typical large US city and find the best fit Rayleigh parameter (the Rayleigh parameter characterises the building height distribution)

11. PW agreed to produce a document for the archive, including all the simulation results (tables of parameters used and values for each interference level calculated)
12. Remi Chayer presented the paper from Avi Freedman and Ofer Kelman (neither Avi nor Ofer was able to be at the meeting). It presents a number of options for channel models for use in coexistence calculations (wanted and unwanted path loss calculations). The following conclusions were unanimously reached
   a. For the 10.5 GHz band it is proposed to adopt the simple 2-ray model, which uses free space loss for a distance related to the antenna height and a fourth power loss beyond that distance (the distance was estimated to be about 28km). PW to add text to the outline.
   b. For the 2.5 GHz band, it was agreed to base results on the FCC model (para 3.1.1 of paper). David Chauncey and Jamie Cornelius agreed to work on the details of this for the next meeting and to consider whether the same methodology could apply to the 3.5GHz band.
13. It was noted that a call for contributions is needed on the following topics
   a. NFD values (measured and/or computed by numerical integration).
   b. ATPC range and step size for systems operating in 2-11 GHz frequency range

The meeting was adjourned at 16.30

Wednesday 12th September 2001

Meeting reconvened at 09.00

14. The paper on parameters for systems operating in the frequency range 2-11 GHz was reviewed and updated. A new version will be posted as an output document from this meeting
15. The paper on parameters for point to point link systems was reviewed and updated. A new version will be posted as an output document from this meeting
16. Remi Chayer proposed that a similar document be prepared for FBWA systems operating in frequency range 2 (23.5 – 43.5 GHz). The parameters used in the first edition of the Recommended Practice were not tabulated before work started, so that the various simulations are not based on a common set of baseline parameters (but they are still valid). A warning to that effect is therefore needed for this new table. PW agreed to prepare this new table.
17. Jamie Cornelius presented an overview of the FCC MMDS planning and coordination procedures. The process is technically complex and difficult for operators to administrate. It is hoped that a coordination procedure can be developed by TG2a that will allow operators to coordinate more easily (possibly involving the WCA and other IEEE regulatory committees). Jamie agreed to edit and update the presentation (which is a company internal document) and post as a contribution for the next meeting. David Chauncey has already uploaded to the server the FCC appendix D of the relevant report and order, which is the basis for the presentation.

Meeting adjourned 13.30

Thursday 13th September 2001

Meeting called to order at 09.00

18. The timeline was reviewed. It was unanimously agreed that no changes should be made until TG2a has a clearer view of when all the simulation tasks can be completed.
19. Remi Chayer presented an analysis of interference from PMP into point to point systems (worst case, single interferer and victim stations). This will be uploaded to the server as a formal contribution (output document from this meeting).
20. Preparation for next meeting: The following actions are planned in preparation for the next meeting:
   a. PW to update and improve the TG2a Working Document, including all the agreed outputs from this meeting
   b. Jack Garrison to complete new simulation work and provide contributions for the next meeting.

c. Jamie Cornelius to revise and submit the paper on MMDS coordination.
d. PW to complete further simulations for the point to point – PMP scenario, this time dealing with the same area, adjacent channel case
e. PW to produce a contribution providing an archive of the simulation data from this meeting
f. David Chauncey and Jamie Cornelius to research the best fit Rayleigh parameter for a representative large US city
g. David Chauncey and Jamie Cornelius to review the channel model for 2.5/3.5 GHz systems and make a proposal (based on the FCC model) by next meeting.
h. A call for contributions will be made on the topics of simulation work for 2-11 GHz systems, NFD values for all systems and ATPC range and step size for all systems.

21. A review was made of the closing report. After a number of small modifications, the report was unanimously accepted.
22. A review was made of the draft minutes. The minutes were corrected and clarified and then provisionally accepted (to be posted as draft minutes, for approval at the next meeting.
23. AOB – no issues raised

Meeting adjourned at 12.00

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